Safely Creating 500 MHz of Spectrum in the 5.925 GHz – 6.425 GHz Band for Immediate Unlicensed Use

GN Docket 17-183

Encina Communications Corp.

A Simple and Safe Solution

1. Add only one new Part 101 rule

2. Make simple changes to Rules 115 and 143

This will:

a) Allow Licensed Backhaul and Unlicensed Fronthaul in the 5.9 – 6.4 GHz band, with Channel Bandwidths up to 120 MHz.

b) Provide a seamless path for Unlicensed consumers to move between the 5 GHz "dirty air" band and the 6 GHz "clean air" band.

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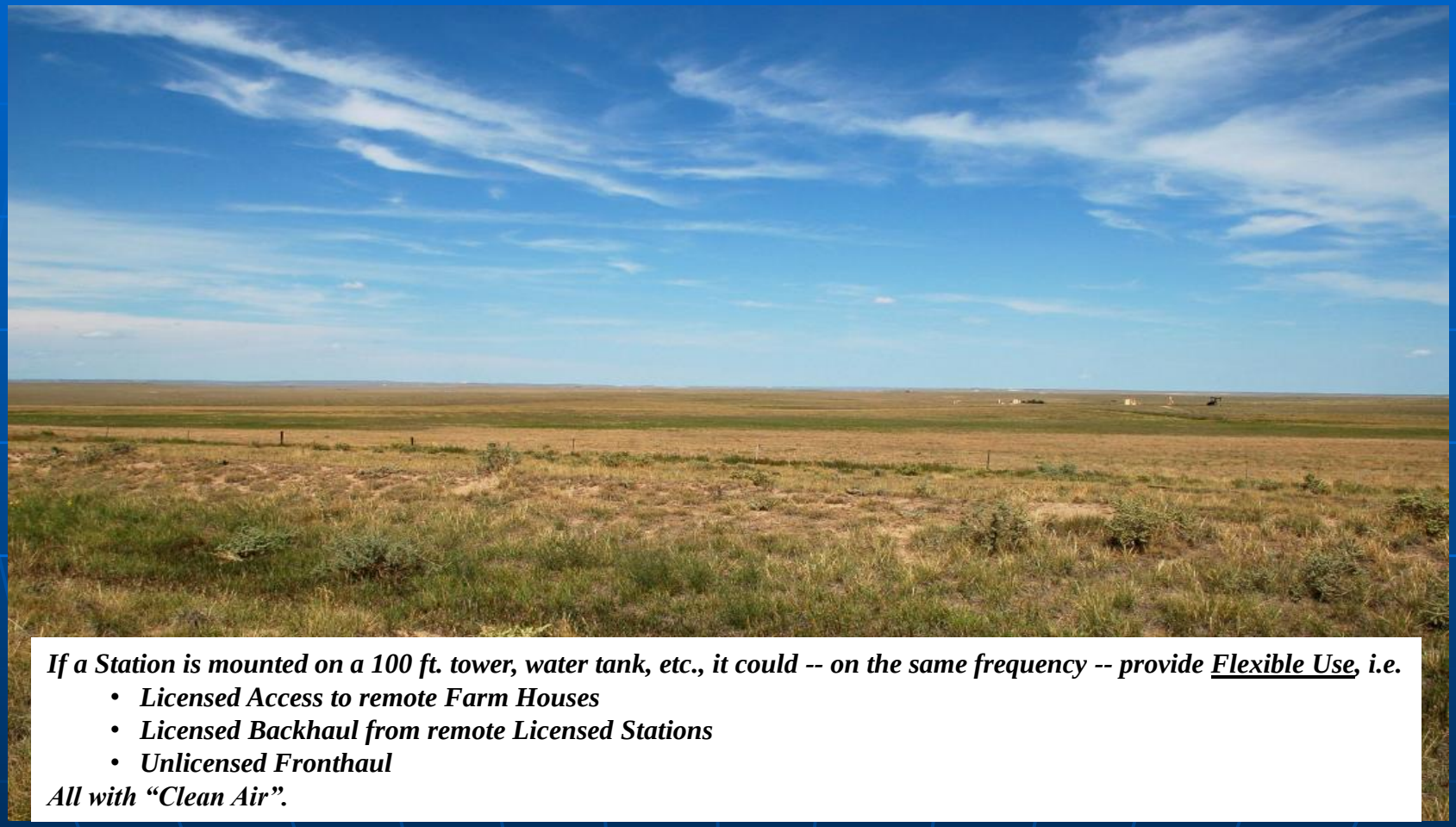
Deployment Example – Rural
(Clear Line of Sight)



If a Station is mounted on a 100 ft. tower, water tank, etc., it could -- on the same frequency -- provide Flexible Use, i.e.

- *Licensed Access to remote Farm Houses*
- *Licensed Backhaul from remote Licensed Stations*
- *Unlicensed Fronthaul*

All with "Clean Air".

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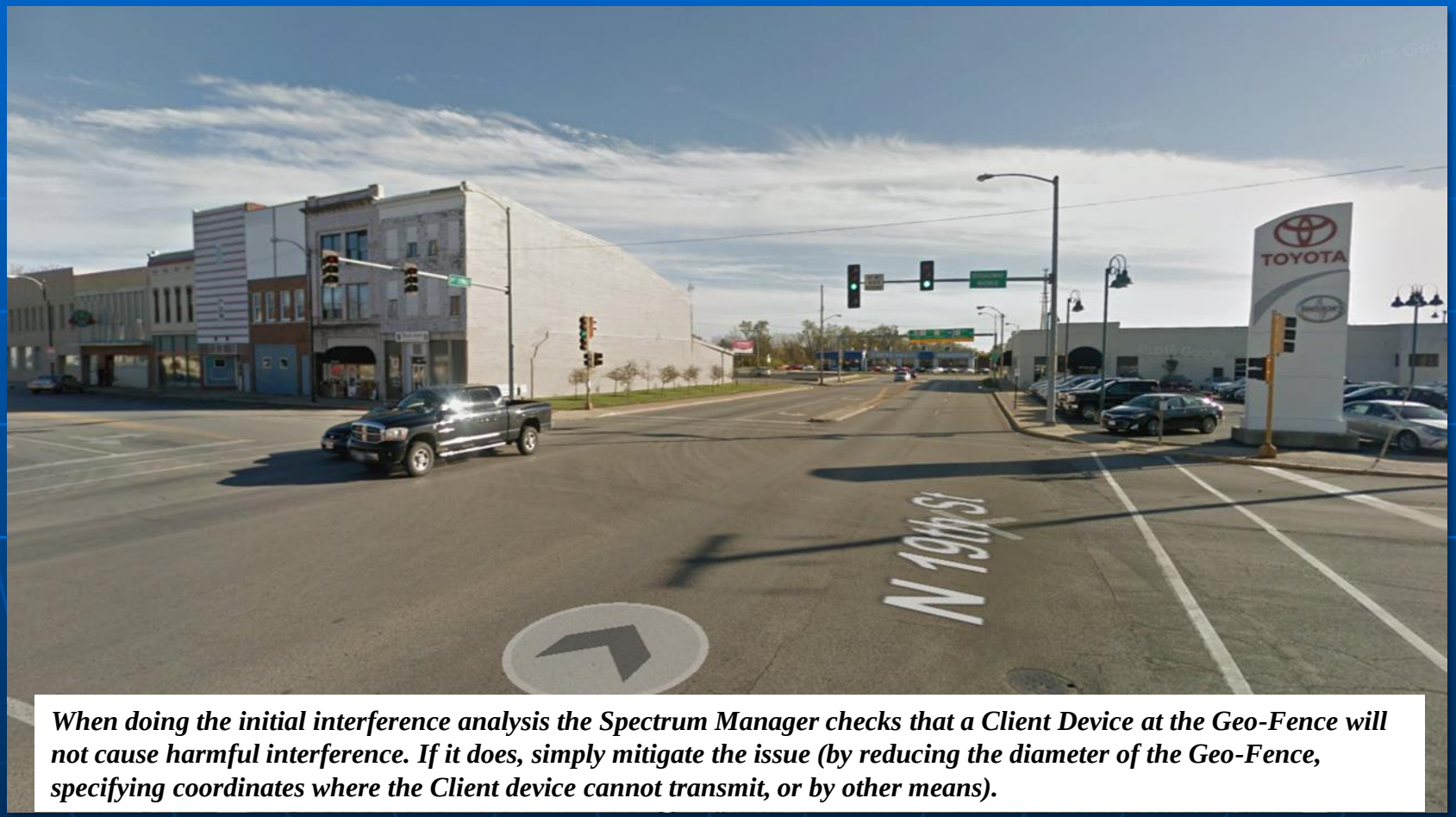
Deployment Example – Rural Town
(Potential Blockage of a Station at Some Angles)



When doing the initial interference analysis the Spectrum Manager checks that a Client Device at the Geo-Fence will not cause harmful interference. If it does, simply mitigate the issue (by reducing the diameter of the Geo-Fence, specifying coordinates where the Client device cannot transmit, or by other means).

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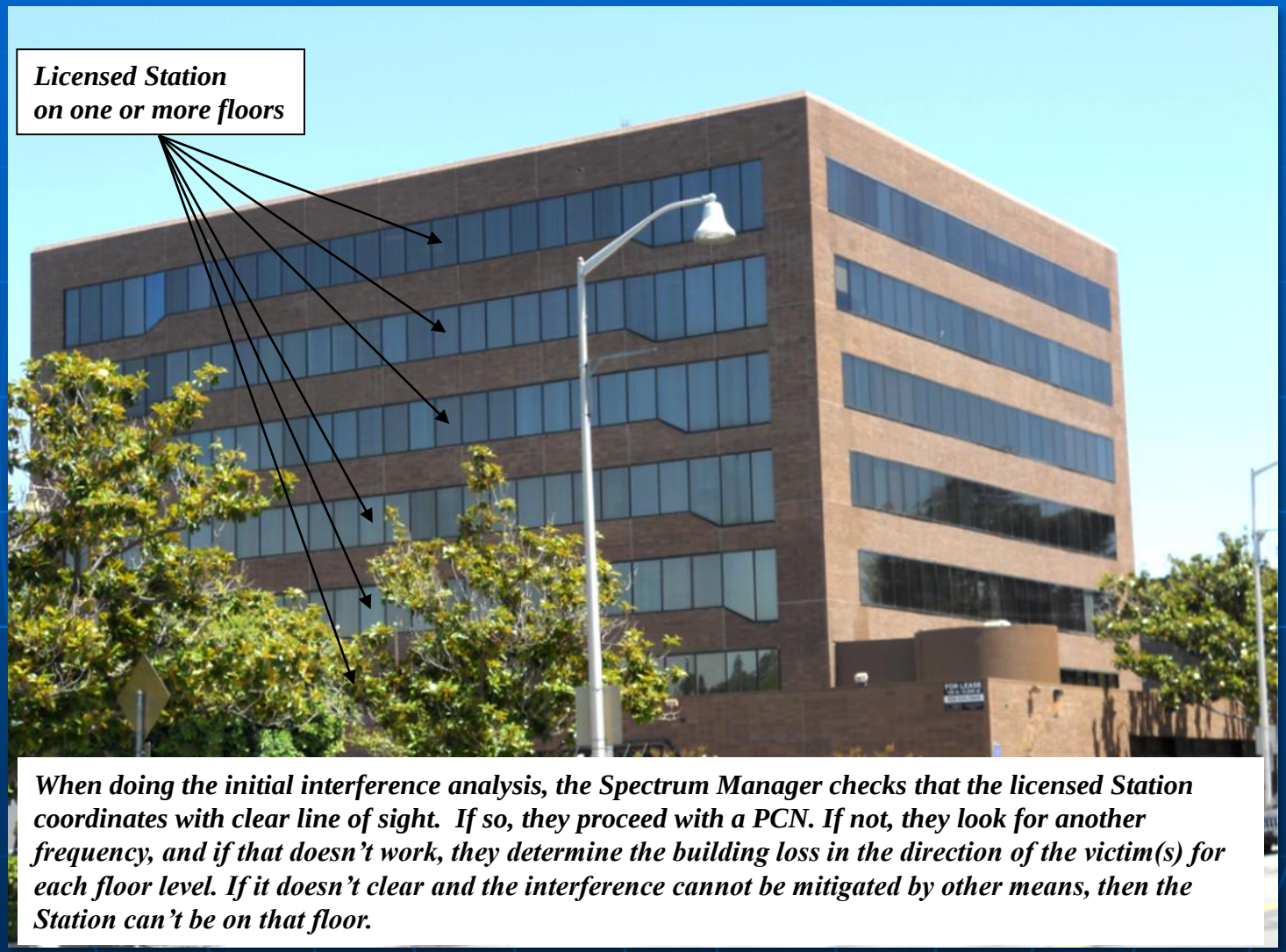
Deployment Example – Urban
(Potential Blockage of a Station at Some Angles)

When doing the initial interference analysis the Spectrum Manager checks that a Client Device at the Geo-Fence will not cause harmful interference. If it does, simply mitigate the issue (by reducing the diameter of the Geo-Fence, specifying coordinates where the Client device cannot transmit, or by other means).

Deployment Example – Inside an Office Building

(Station is Blocked at All Angles)



When doing the initial interference analysis, the Spectrum Manager checks that the licensed Station coordinates with clear line of sight. If so, they proceed with a PCN. If not, they look for another frequency, and if that doesn't work, they determine the building loss in the direction of the victim(s) for each floor level. If it doesn't clear and the interference cannot be mitigated by other means, then the Station can't be on that floor.

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Summary
Unlicensed Use in Part 101 Bands

Imperative 1: ***No Harmful Interference***

The proposed Part 101 rule changes completely satisfy this imperative.

Imperative 2: ***Time is of the Essence***

To meet Congressional deadlines and address the imperatives, ECC respectfully requests the Commission immediately issue an NPRM for the 5.925 GHz – 6.425 GHz band to add the proposed new Part 101 rule and the two rule modifications, and to positively and expeditiously respond to requests for Waivers-of-the-Rules pending a rulemaking.

Conclusion

To solve the problem of increasing the efficient use of Part 101 licensed spectrum, ECC has expended considerable R&D resources to make safe, expanded flexible use of mid-band spectrum possible with readily available hardware and software, using established Part 101 procedures with existing industry standards. ECC is therefore looking forward to using its know-how and IP to work with stakeholders to rapidly bring the benefits of unlicensed operation in mid-band licensed spectrum to urban, suburban and rural subscribers nationwide.

Proposed Rule Changes

Encina Communications Corp.

New Rule

§101._ _ _

(a) **Fixed Stations** that supports unlicensed client devices must comply with all the applicable parts of Rule 101, and in addition must:

(1) Limit the EIRP to a maximum of 50 dBm.

(2) Transmit its operating protocol (3GPP, 802.11 or proprietary).

(3) Transmit its latitude, longitude and elevation AMSL.

(4) Transmit the maximum distance (2 kilometers or less) that the client devices can be from the base station.

New Rule (continued)

(b) **Unlicensed client devices** must:

(1) Have a maximum EIRP of 27 dBm.

(2) Listen before talk.

(3) Only transmit after it identifies a fixed licensed station with which it has the capability to communicate, and its distance from the fixed station and altitude are compliant with the requirements given by the licensed station.

Rule Change – 101.115

Rule 101.115(a) – "*~~Unless otherwise authorized upon specific request by the applicant, each s~~ Stations authorized under the rules of this part must employ a directional antenna adjusted with the center of the major lobe of radiation in the horizontal plane directed toward the receiving station with which it communicates: provided, however, where a station communicates with more than one point, a multi- or omni-directional antenna ~~may be~~ is authorized ~~if necessary~~. New Periscope antenna systems will not, under ordinary circumstances, be authorized."*

Benefit: Eliminates unnecessary delay after successful prior coordination.

Rule Change – 101.143

Rule 101.143:
(a) Unchanged.

Rule 101.143:

(b) *For paths shorter than those specified in paragraph (a) of this section, the EIRP shall not exceed ~~the value derived from the following equation:~~* 50 dBm.

[balance deleted]

Rule 101.143:
(c) Deleted (related to equation in (b) above, no longer applicable).

Benefit: Makes it possible to operate at all distances below the minimum path length without unnecessary delay.

Thank You

Encina Communications Corp.